WHAT IS CLAIMED IS:

1. A display apparatus capable of illuminating a light modulation device with a light from a light emitting body to display an image on a display plane, the apparatus comprising:

a plurality of light emitting bodies different from one another in emitted light color;

a light receiving device configured to detect the light from the light emitting bodies and to output an amount of light received; and

a color balance adjustment control section configured to adjust and control a color balance in the display plane in accordance with the amount of light received by the light receiving device,

wherein the color balance adjustment control section is configured to be capable of identifying the emitted light color of the light emitting body relating to the amount of light received.

2. The apparatus according to claim 1, wherein the plurality of light emitting bodies comprises three semiconductor devices whose emitted light colors are red, green, and blue.

3. The apparatus according to claim 1, wherein the plurality of light emitting bodies comprise light emitting diodes.

4. The apparatus according to claim 1, wherein the color balance adjustment control section

controls each lighting timing of the plurality of light emitting bodies, and

identifies the emitted light color of the light emitting body relating to the amount of light received in accordance with the lighting timing.

5. The apparatus according to claim 1, wherein

the light receiving device is disposed for each emitted light color of the light emitting body, and

the color balance adjustment control section identifies the emitted light color of the light emitting body relating to the amount of light received in accordance with light receiving device identification information specifying the light receiving device.

6. The apparatus according to claim 1, wherein the color balance adjustment control section adjusts and controls the color balance by calibration information including: one of an amount of light emitted by the light emitting body and emission control information; and the amount of light received during the emission.

7. The apparatus according to claim 1, wherein the color balance adjustment control section includes an emitted light amount adjustment control section configured to control lighting so as to adjust the amount of light emitted by the light emitting body in adjusting and controlling the color balance in the

display plane.

8. The apparatus according to claim 1, wherein the color balance adjustment control section includes a display data correction control section configured to adjust display data to be supplied to the light modulation device in adjusting and controlling the color balance in the display plane.

9. The apparatus according to claim 7, wherein the emitted light amount adjustment control section decreases a supply current into the light emitting body relating to at least any one of different emitted light colors as compared with that before the adjustment in such a manner that the amount of light emitted of each of the different emitted light colors satisfies an emitted light amount ratio between the emitted light colors required for keeping the color balance in adjusting and controlling the color balance in the display plane.

10. The apparatus according to claim 9, wherein the emitted light amount adjustment control section in adjusting and controlling the color balance in the display plane is configured to be capable of switching:

a life priority mode in which the supply current into the light emitting body relating to at least any one of the different emitted light colors is decreased as compared with that before the adjustment; and

a brightness priority mode in which the supply

current into the light emitting body relating to at least any one of the different emitted light colors is increased as compared with that before the adjustment.

11. The apparatus according to claim 7, wherein the emitted light amount adjustment control section increases a supply current into the light emitting body relating to at least any one of different emitted light colors as compared with that before the adjustment in such a manner that the amount of light emitted of each of the different emitted light colors satisfies an emitted light amount ratio between the emitted light colors required for keeping the color balance in adjusting and controlling the color balance in the display plane.

12. The apparatus according to claim 11, wherein the emitted light amount adjustment control section in adjusting and controlling the color balance in the display plane is configured to be capable of switching:

a life priority mode in which the supply current into the light emitting body relating to at least any one of the different emitted light colors is decreased as compared with that before the adjustment; and

a brightness priority mode in which the supply current into the light emitting body relating to at least any one of the different emitted light colors is increased as compared with that before the adjustment.

13. The apparatus according to claim 1, wherein

the light receiving device detects an unnecessary light which is different from a luminous flux to illuminate the display plane with the light from the light emitting body and which is a light emitted by the light emitting body.

14. The apparatus according to claim 13, wherein the light receiving device is disposed to detect the light in the vicinity of the light emitting body.

15. The apparatus according to claim 13, wherein the light receiving device is disposed to detect the light around the light modulation device.

16. The apparatus according to claim 13, wherein the light modulation device comprises a mirror plane deflection time light modulation unit including a plurality of micro mirror plane devices to polarize an incident light in two different directions including a first direction in which a video corresponding to the image data can be displayed on the display plane and a second direction which is different from the first direction to modulate the light, and

the light receiving device is disposed in a position capable of detecting the light of the second direction of the mirror plane deflection type light modulation unit.

17. The apparatus according to claim 1, wherein

the light in an optical path in which the light from the light emitting body illuminates the display

plane is bent, and

the light receiving device detects the bent light.

18. The apparatus according to claim 17, further comprising: an optical member capable of focusing the light of the display region of the display plane onto the light receiving device.

19. The apparatus according to claim 18, wherein an image pickup device including a plurality of light receiving devices arranged in matrix is used as the light receiving device.

20. The apparatus according to claim 17, further comprising a light guide member which guides the light obtained by bending the light in the optical path into the light receiving device disposed outside the optical path.

21. The apparatus according to claim 1, wherein the color balance adjustment control section controls a correction of the color balance in synchronization with the control of the light modulation device.

22. The apparatus according to claim 1, wherein the color balance adjustment control section detects the amount of light received by the light receiving device in synchronization with a switch control of the light modulation device.

23. The apparatus according to claim 22, wherein the color balance adjustment control section integrates the amount of light received.

24. The apparatus according to claim 1, wherein the light receiving device detects the amount of the light from the light emitting body and also includes a wavelength detection function of detecting wavelength information of the light.

25. The apparatus according to claim 1, further comprising a mode switch section constituted to be capable of switching a display mode and an adjustment mode,

wherein the display mode is a state in which the image is displayed on the display plane in accordance with a video signal, and

the adjustment mode is a state in which image data to be inputted into the light modulation device is a calibration image suitable for the color balance adjustment control section to adjust the color balance, when the light receiving device detects the light amount.

26. The apparatus according to claim 25, wherein the mode switch section switches the mode in accordance with a user's operation.

27. The apparatus according to claim 25, wherein the mode switch section automatically switches the mode in response to a predetermined calibration start signal.

28. The apparatus according to claim 27, wherein the mode switch section includes a timer counter

configured to produce the predetermined calibration start signal.

29. The apparatus according to claim 27, wherein the mode switch section includes a temperature sensor configured to produce the predetermined calibration start signal.

30. The apparatus according to claim 1, wherein image data is inputted into the light modulation device in accordance with a video signal,

the light receiving device detects the light amount, and

the color balance adjustment control section adjusts the color balance.

31. The apparatus according to claim 30, wherein the light receiving device detects the light optically modulated by the light modulation device.

32. The apparatus according to claim 1, wherein the light receiving device includes an image pickup device configured to detect the light optically modulated by the light modulation device, and

the color balance adjustment control section detects a predetermined calibration pixel suitable for the adjustment of the color balance from a picked-up image of the image pickup device.

33. The apparatus according to claim 1, wherein the color balance adjustment control section includes:

a function of detecting a state in which

predetermined conditions are not satisfied in adjusting the color balance; and

a function of notifying a user of this in a recognizable state with the detection of the state.

34. The apparatus according to claim 1, further comprising a color balance target value setting section configured to be capable of setting a desired color balance in the adjustment of the color balance in the display plane.

35. The apparatus according to claim 6, further comprising:

a recording medium configured to record the calibration information; and

a holding member configured to integrally hold the respective light emitting bodies in acquiring the calibration information.

36. The apparatus according to claim 35, wherein the recording medium includes a semiconductor memory.

37. The apparatus according to claim 1, further comprising an optical member configured to guide an emitted light of the light emitting body into the light modulation device and to irradiate the light modulation device with the emitted light,

wherein the color balance adjustment control section includes:

a lighting section configured to light and drive the respective light emitting bodies;

a moving section configured to relatively move the light emitting body with respect to the optical member; and

a light selection color section configured to control at least one of the moving section and the lighting section so as to select the light with which the light modulation device is illuminated from the emitted lights of the plurality of light emitting bodies.

38. The apparatus according to claim 37, wherein the color balance adjustment control section identifies the emitted light color of the light emitting bodies relating to the amount of light received in accordance with a control signal relating to the selection of the light selection control section.

39. A light source device for use in a display apparatus capable of illuminating a light modulation device with a light from a light emitting body to display an image on a display plane, comprising:

a plurality of light emitting bodies different from one another in emitted light color; and

a recording medium configured to record calibration data concerning the plurality of light emitting bodies,

wherein the light source device detachably and integrally holds the plurality of light emitting bodies and the recording medium with respect to the display

apparatus, and

the display apparatus comprises:

a light receiving device configured to detect the light from the light emitting bodies and to output an amount of light received; and

a color balance adjustment control section configured to adjust and control a color balance in the display plane in accordance with the amount of light received by the light receiving device, the color balance adjustment control section being configured to be capable of identifying the emitted light color of the light emitting body relating to the amount of light received.

40. The apparatus according to claim 39, wherein the recording medium includes a semiconductor memory.

41. An illuminating unit which illuminates a region to be irradiated with a light from a light emitting body, comprising:

a plurality of light emitting bodies different from one another in emitted light color;

a light receiving device configured to detect the light from the light emitting bodies and to output an amount of light received; and

a color balance adjustment control section configured to adjust and control a color balance in the region in accordance with the amount of light received by the light receiving device,

wherein the color balance adjustment control section is configured to be capable of identifying the emitted light color of the light emitting body relating to the amount of light received.

42. A display apparatus capable of illuminating a light modulation device with a light from a light emitting body to display an image on a display plane, comprising:

a plurality of light emitting bodies different from one another in emitted light color;

light detection means for detecting the light from the light emitting bodies to output an amount of light received; and

color balance adjustment control means for adjusting and controlling a color balance in the display plane in accordance with the amount of light received from the light detection means,

wherein the color balance adjustment control means is configured to be capable of identifying the emitted light color of the light emitting body relating to the amount of light received.

43. A light source device for use in a display apparatus capable of illuminating a light modulation device with a light from a light emitting body to display an image on a display plane, comprising:

a plurality of light emitting bodies different from one another in emitted light color; and

recording means for recording calibration data concerning the plurality of light emitting bodies,

wherein the light source device detachably and integrally holds the plurality of light emitting bodies and the recording means with respect to the display apparatus, and

the display apparatus comprises:

light detection means for detecting the light from the light emitting bodies to output an amount of light received; and

color balance adjustment control means for adjusting and controlling a color balance in the display plane in accordance with the amount of light received from the light detection means, the color balance adjustment control means being configured to be capable of identifying the emitted light color of the light emitting body relating to the amount of light received.

44. An illuminating unit which illuminates a region to be irradiated with a light from a light emitting body, comprising:

a plurality of light emitting bodies different from one another in emitted light color;

light detection means for detecting the light from the light emitting bodies to output an amount of light received; and

color balance adjustment control means for

adjusting and controlling a color balance in the region in accordance with the amount of light received from the light detection means,

wherein the color balance adjustment control means is configured to be capable of identifying the emitted light color of the light emitting body relating to the amount of light received.